

PROJECT PROJECT

Advancing the Sustainable Development Goals in India

Desire Energy Pvt. Ltd.

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ENECUTIVE SUMMARY

Project Jal Prabal, implemented by Desire Energy Pvt Ltd, is aimed at building smart, efficient and sustainable public water infrastructure in rural India. The five projects have a total valuation of 1592 crores, equivalent to 19.44 million USD. The goal of the organization is to provide clean potable water to every rural household in India and supply 55 Litre Per Capita Per Day (LPCD) of clean water. The project scope is aligned with the Jal Jeevan Mission (JJM) of the Government of India and includes the installation of 2.5 lakh FHTC connections and improvisation of existing water supply systems by retrofitting and laying of pipelines to meet the potable water requirements of every village. IoT devices and solar-based water plants will also be installed, and a centralized control system (SCADA) will be developed.

One of the primary objectives of Project Jal Prabal is to provide a clean water supply of 55 LPCD to every rural household. This is achieved by laying networks of pipes to meet the potable water requirements of each village, including individual house connections. In areas where electricity supply is limited, Project Jal Prabal has installed solar-based water plants to meet the energy needs of the project. This supports the SDG 7.2 target of increasing the share of renewable energy in the global energy mix, as well as the SDG 13.2 objective of integrating climate change measures into national policies, strategies, and planning.

Project Jal Prabal is working to improve water quality by reducing pollution and minimizing the release of hazardous chemicals. The project operates a water treatment plant in Baghera, Ajmer district in Rajasthan that supplies 75,000 KL of potable water per day. The governance of the project is done according to PMI standards and the include outcomes 257.000 FHTC connections, 11265 km of water pipelines laid, 507 overhead service reservoirs, 479 pumphouses, and 300.000 residents supplied with clean water. The expected outcome over a 10-year period includes clean potable water for all, cost savings, reduced dependency on coal, and cumulative emission reduction of 2,18,820 tCO2e. The project is staffed by over 2000 employees and the in-kind contribution comes from Desire Foundation. Partnering organizations include SWSM, UP (State Water and Sanitation Mission, Uttar Pradesh).

The project aims to reduce Non-Revenue Water (NRW) through the use of technologies such as IoT and AI. IoT devices are being installed and software is being developed to manage the operations and maintenance of the systems, reducing the chances of human error and providing periodic updates on the health of the systems. The centralized control and monitoring system (SCADA) for data analytics helps in predictive analysis for component failures, leakages, and other issues, leading to a reduction in NRW.

The project is also contributing to SDG 9 on Industry, Innovation, and Infrastructure by promoting scientific research and upgrading the technological capabilities of industrial sectors. The transformation of the old water infrastructure to smarter. more cost-efficient systems, the reduction of NRW, and the use of technologies such as IoT and AI are all examples of the innovative solutions being employed by the project. By digitizing the conventional tracking system and developing a centralized control and monitoring system for data analytics, Project Jal Prabal is setting an example for other organizations to follow.

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PROJECT DETAILS

Access to safe and affordable drinking water is a fundamental human right, and Nations' Sustainable the United Development Goal (SDG) 6.1 aims to achieve universal and equitable access to this essential resource by 2030. Project Jal Prabal, an innovative public water infrastructure project in rural India, is working towards this goal by providing clean potable water to residents and advancing SDGs related to water, energy, employment, and technological capabilities.

Project Jal Prabal, a clean water project initiated by Desire Energy Pvt Ltd and aimed at providing safe and affordable drinking water to rural areas in India, is making significant contributions towards the achievement of several of the United Nations' Sustainable Development Goals (SDGs). The project, with its innovative solutions and cutting-edge technologies, is addressing the challenges faced by rural communities in accessing clean water, while also creating employment opportunities, improving water management practices and promoting sustainable development. This project works towards the goal of building public water infrastructure in rural India in a smart, efficient and sustainable manner. The project has a total valuation of INR 1592 crores, equivalent to 19.44 million USD and is aligned with the Jal Jeevan Mission (JJM) of the Government of India, which aims to supply 55 Litre Per Capita Per Day (LPCD) of clean water to every rural household.

The scope of work in line with JJM includes the installation of 2.5 lakh FHTCs, the building of public water infrastructure, the improvement of existing water supply systems, the laying of water supply networks, the implementation of smart and efficient water supply systems, and the installation of IoT devices and software.

The objectives of Project Jal Prabal are to provide clean potable water supply to residents, reduce Non-Revenue Water (NRW), use technologies like IoT and AI to reduce the chances of human error, and digitize the conventional tracking system. The project aims to achieve these objectives by installing 2.5 lakh Functional Household Tap Connections (FHTCs), building public water infrastructure in rural India, retrofitting existing water supply systems, laying networks of pipes, installing IoT devices and software, and developing solarbased water plants.



ACCESS TO SAFE DRINKING WATER USING CUTTING EDGE TECHNOLOGY

One of the major SDGs targeted by Project Jal Prabal is Goal 6, which aims to ensure access to safe and affordable drinking water for all. The project aims to achieve this bv building public water infrastructure in rural India in a smart, efficient and sustainable manner. By providing 55 liters of clean water per capita per day to every rural household and laying networks of pipes to meet the potable water requirements of each village, Project Jal Prabal is ensuring universal and equitable access to safe drinking water.

Project Jal Prabal is working towards SDG 6.4 by substantially increasing water-use efficiency and reducing the number of people suffering from water scarcity. This is achieved through a number of initiatives, including the reduction of Non Revenue Water (NRW) and the use of technologies such as IoT and AI to monitor the systems and reduce the chances of human error. The project has installed IoT devices and developed software to manage the operations and maintenance of the systems, and has digitized the conventional tracking system used for operations and maintenance.

In this manner, the energy efficient water infrastructure in Project Jal Prabal also supports the SDG 9.5 target of enhancing scientific research and upgrading the technological capabilities of industrial sectors in developing countries. The transformation of the old infrastructure to smarter and much more cost-efficient systems, combined with the use of IoT and AI technologies, provides opportunities for innovation and the development of new solutions to address water scarcity. The transformation of the old water infrastructure to smarter, more costefficient systems, the reduction of NRW and the use of technologies such as IoT and AI, are all examples of the innovative solutions being employed by the project. By digitizing the conventional tracking system and developing a centralized control and monitoring system for data analytics, Project Jal Prabal is setting an example for other organizations to follow.

Further, in line with Goal 6.3, Project Jal Prabal is working to improve water quality by reducing pollution and minimizing the release of hazardous chemicals. The project operates a water treatment plant in Baghera, Ajmer district in Rajasthan that supplies 75,000 KL of potable water per day. The plant undergoes several operations to remove impurities, including bicarbonates, calcium and solids, through the use of polyaluminium chloride as a coagulant.

ADDRESSING CLIMATE CHANGE

Project Jal Prabal. with ite implementation of solar-based water plants. has made significant contributions towards achieving several Sustainable Development Goals (SDGs) as outlined by the United Nations. The installation of these solar-based water plants has provided a source of renewable energy, which aligns with the SDG 7.2 target of increasing the share of renewable energy in the global energy mix. This shift towards renewable energy sources is a crucial step towards mitigating the impacts of climate change and reducing the reliance on nonrenewable sources of energy.

Furthermore, by promoting sustainable development, the project is also contributing to Goal 13 on Climate Action. The energy-efficient water infrastructure and the installation of solar-based water plants are examples of the project's efforts to integrate climate change measures into national policies, strategies and planning. Additionally, Project Jal Prabal has also demonstrated a commitment towards the SDG 13.2 objective of integrating climate change into national measures policies, strategies, and planning. By utilizing solar energy, the project has reduced its carbon footprint and contributed to the reduction of greenhouse gas emissions, a key factor in mitigating the impacts of climate change. This adoption of renewable energy sources and integration of climate change measures into the project's strategy demonstrates the project's commitment towards sustainable development and environmental stewardship.

The implementation of solar-based water plants has also had numerous benefits for the local communities. Firstly, it has provided a reliable source of clean water, which is essential for supporting community health and well-being. Thirdly, not only reduces the dependence on traditional energy sources that emit greenhouse gases (GHGs), but also facilitates community self-reliance for their energy needs. Furthermore, by reducing the reliance on traditional energy sources, the project has helped to reduce the cost of water production and distribution, making it more affordable and accessible to local communities. This has improved access to clean water for those who were previously without and helped to improve the overall quality of life for these communities.



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TRANSFORMING RURAL ECONONN

Goal 8 on Decent Work and Economic Growth is also being advanced by Project Jal Prabal, as the project is providing employment to rural populations and improving representation of rural women in the workforce. The project employs 2000+ people, 90% of whom are from rural areas thereby transforming the rural livelihoods situation.

Project Jal Prabal also has a positive social impact, contributing to SDG 8.5 by providing employment to the rural population and better representation of the rural female population in the workforce. The employment opportunities provided by the project help to improve the livelihoods of rural residents and support the economic development of the region.

Partnering organizations include State Water and Sanitation Mission (SWSM), Uttar Pradesh, and other organizations with similar goals. On an ongoing basis, Desire Energy Private Limited offers a variety of training programs for its employees to improve their technical and leadership abilities, as well as their general personality development.

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FURTHERING THE SDG AGENDA



Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

- Building public water infrastructure of rural India in a smart, efficient and sustainable manner.
- Clean potable water supply to residents.
- Supply 55 LPCD clean water to every rural household
- Laying networks of pipes to meet the potable water requirements of every single village.
- Laying of water supply network including individual house connection
- Installation of solar based water plants in rural areas which don't have sufficient electricity supply.

Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and increasing recycling and safe reuse globally.

• We run a water treatment plant in Baghera, Ajmer district in Rajasthan.

Litres? 75000KL of potable water per day supplied

• What all impurities are treated? Several operations are performed: Removal of bicarbonates, calcium etc to remove the hardness of water, Polyaluminium chloride is used as a coagulant to remove the solids from the water

• From what Ph level (input) to what Ph Level (output): input pH varies from 6-9 on pH scale and the output is around 6.5-8.5

Target 6.4: By 2030, substantially increase wateruse efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

- Reduction of Non Revenue Water (NRW).
- More use of Technologies like IoT and AI, to reduce the chances of human error and receive updates periodically about the health of the systems to take the required action. Installation of IoT devices and development of software to manage the operations and maintenance of the systems.
- Energy efficient water infrastructure
- Digitization of the conventional tracking system used for operations and maintenance. Tracking connected to server. No other organization is doing this (our unique offering).
- Control & monitoring system (SCADA) for data analytics for all schemes at a centralized control station of each district which helps in predictive analysis for component failures, leakages, and take other actions that result in the reduction of non revenue water.



Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.

• Installation of solar based water plants in rural areas which don't have sufficient electricity supply.

Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.

- Social Impact: Employment to the rural population.
- Better representation of the rural female population in the workforce.

Target 9.5: Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.

- Transformation of the old infrastructure to smarter and much more cost efficient systems.
- Reduction of Non revenue Water (NRW).
- Energy efficient water infrastructure.
- More use of Technologies like IoT and AI, to reduce the chances of human error and receive updates periodically about the health of the systems to take the required action. Installation of IoT devices and development of software to manage the operations and maintenance of the systems.



- Digitization of the conventional tracking system used for operations and maintenance. Tracking connected to server. No other organization is doing this (our unique offering).
- Control & monitoring system (SCADA) for data analytics for all schemes at a centralized control station of each district which helps in predictive analysis for component failures, leakages, and take other actions that result in the reduction of non revenue water.

Target 13.2: Integrate climate change measures into national policies, strategies and planning.

- Energy efficient water infrastructure
- Installation of solar based water plants in rural areas which don't have sufficient electricity supply.



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Integrated Water Management